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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,451	09/29/2003	Toru Nimura	117070	6673
25944	7590	06/29/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			DUONG, THOI V	
			ART UNIT	PAPER NUMBER
			2871	
DATE MAILED: 06/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/671,451

Applicant(s)

NIMURA ET AL.

Examiner

Thoi V. Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) 4, 7-12 and 19-21 ~~is/are~~ withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 13-16, 22 and 23 ~~is/are~~ rejected.
- 7) ☒ Claim(s) 17 and 18 ~~is/are~~ objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species II, claims 13-18 in the reply filed on April 11, 2005 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application could be made without serious burden. This is not found persuasive because the application contains claims directed to three patentable distinct species:

Species I consisting of claims 4 and 7-12 which are drawn to an electro-optic device according to Figs. 13-15 where a ratio of standard deviation / average value of reflection luminance or average value for a total of the existence rates of the small planes average value for a total area of the projections of the recesses constituting said asperities or average value of lengths of Delaunay lines is calculated;

Species II consisting of claims 13-18 drawn to an electro-optic device according to Figs. 9-12 and 16 where the recesses/projections is formed by rotating the reference pattern about a predetermined position; and

Species III consisting of claims 19-21 which are drawn to an electro-optic device according to Fig. 17 where the plurality of recess/projection patterns are obtained by translating a region to cut out each of the recess/projection patterns from the basic pattern up, down, rightward or leftward while maintaining continuity in patterns at ends of said cutting-out region.

Because these inventions are distinct for the reasons given above and the search required for Species II is not required for Species I and/or Species III, the requirement is still deemed proper and is therefore made FINAL.

2. According to the amendment filed April 11, 2005, claim 1 is amended. Currently, claims 1-23 are pending in this application, of which claims 4, 7-12 and 19-21 are withdrawn from consideration and claims 1-3, 5, 6, 13-18, 22 and 23 are considered in this office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 is indefinite since it is unclear what "m" and "n" are in the recitation "the m x n number of pixels" of the claim. The specification does not define "m" and "n" as well as their limitations.

In the following rejection, the Examiner will interpret "m" as number of columns and "n" as number of rows of pixels.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5, 6 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuda et al. (Tsuda, USPN 6,313,895 B1).

Re claim 1, as shown in Figs. 1-3 and 7, Tsuda discloses an electro-optic device, comprising:

a recess/projection forming layer having asperities 6 formed in a dispersed condition (Fig. 1);

a multiplicity of pixels 2 formed in a matrix pattern on a substrate for holding an electro-optic material 38 (Figs. 1 and 7); and

a light reflecting film 22 formed above said recess/projection forming layer being disposed in each of the multiplicity of pixels formed in a matrix pattern on a substrate 10 for holding an electro-optic material, and said recess/projection forming layer forming a recess/projection pattern 3-5 to scatter light on a surface of said light reflecting film (Figs. 1 and 7 and col. 7, lines 28-58),

the multiplicity of pixels 2 being grouped into plural units each including a plurality of pixels, the recess/projection pattern 3-5 being formed to provide a different pattern for each pixel 2a-2c, at least in each of the units and the recess/projection pattern for the pixel at the same position in each unit differs among the units (Fig. 2, from left to right, pixels in column 1 as unit 1, pixels in column 2 as unit 2, pixel in column 3 as unit 3 and pixels in column 4 as unit 4.)

Re claim 2, the recess/projection pattern is formed to provide a different pattern 3-5 for each pixel 2a-2c (Fig. 1), and variations in planar shapes, planar sizes, or planar

position distribution of projections or recesses constituting said asperities 6 are controlled among the pixels (Figs. 1 and 2 and col. 7, line 59 through col. 8, line 23).

Re claim 3, the projections or the recesses constituting said asperities 6 have a circular plan shape as shown in Fig. 1.

Re claim 5, the projections or the recesses constituting said asperities 6 are formed in plural kinds having different planar sizes in one pixel as shown in Fig. 1.

Re claim 6, the projections or the recesses constituting said asperities 6 are formed such that the number of the projections or the recesses having the same planar size in one pixel being equal among the pixels as shown in Fig. 2.

Re claim 22, as shown in Fig. 7, the substrate is prepared as a first substrate 36, a second substrate 37 being arranged in an opposed relation to said first substrate, and a liquid crystal 38 being held as said electro-optic material between both said substrates.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 13-16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (Tsuda, USPN 6,313,895 B1) in view of Kanou et al. (Kanou, USPN 6,747,718 B2).**

Re claims 13 and 14, as shown in Fig. 2, Tsuda discloses an asperity forming pattern being set as a reference pattern 7-9, and positions of the projections and the recesses constituting said asperities for each of the pixels being decided using a recess/projection pattern which is obtained by rotating the reference pattern about a predetermined position. For example, the projections and the recesses of pixel 2e are obtained by rotating the reference pattern 8 about a predetermined position.

However, the reference pattern of Tsuda is not larger than one pixel or a total area of the $m \times n$ number of pixels.

As shown in Fig. 3B, Kanou discloses an electro-optic device comprising a reference pattern 46 in units of two pixels or more (col. 8, lines 43-45).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electro-optic device of Tsuda with the teaching of Kanou by forming a reference pattern larger than one pixel or a total area of the $m \times n$ number of pixels so as to suppress interference of reflecting properties and to provide high brightness and high definition display performance (col. 3, lines 53-61).

Re claim 15, as shown in Fig. 2, Tsuda discloses different recess/projection patterns being formed in the respective pixels 2e by moving the center of rotation of the reference pattern 8 while the reference pattern is rotated (col. 8, lines 1-9).

Re claim 16, as shown in Fig. 2, the center of rotation of the reference pattern 8 being set to a position deviated from the projections or the recesses constituting said asperities to produce the pattern in pixel 2e.

Re claim 23, as intended use, it is obvious that the electro-optic device can be applied to an electronic apparatus as a display.

Allowable Subject Matter

9. Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

None of the prior art of record discloses, in combination with other limitations as claimed, the center of rotation of the reference pattern being set to a position overlapping with the contact hole as recited in claim 17 or being set in the light passing window in claim 18.

The most relevant reference, USPN 6,313,895 B1 to Tsuda et al. (Tsuda), fails to disclose or suggest a position at the contact hole or the light passing window for the center of rotation of the reference pattern. As shown in Fig. 2, Tsuda only discloses that the uneven spot pattern of pixel 2e is rotated from the uneven spot reference pattern of pixel 2b (col. 8, lines 1-9).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2871

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



06/26/2005



**DUNG T. NGUYEN
PRIMARY EXAMINER**